

Kouichi Takahashi, et al.
Application No.: 09/590,897
Page 2

PATENT

IN THE CLAIMS:

Please amend claims 9 and 10.

1 1. (Currently amended): A sealing structure for multi-chip modules,
2 comprising:
3 a wiring board having one face mounted with a plurality of semiconductor
4 devices and another face having connecting pins arranged thereover;
5 a frame having a thermal expansion rate compatible with that of the wiring
6 board, provided on the circumference of that face of the wiring board mounted with the
7 semiconductor devices;
8 a cap covering the plurality of semiconductor devices, the cap having a
9 thermal expansion rate different from that of the frame;
10 a heat conducting material provided between the plurality of
11 semiconductor devices and the cap for transmitting heat generated by the plurality of
12 semiconductor devices to the cap;
13 an attachment for fixing the frame and the wiring board to each other; and
14 an intervening member disposed between the frame and the cap such that
15 the frame and the cap are spaced apart, wherein there is an absence of any direct physical
16 contact between the frame and the cap ~~the frame and the cap being joined to each other~~
17 ~~via the intervening member.~~

1 2. (Original): A sealing structure for multi-chip modules as in claim
2 1 wherein the intervening member comprises an elastic substance.

1 3. (Original): A sealing structure for multi-chip modules as in claim
2 2 wherein the intervening member comprises an O-ring.

1 4. (Original): A sealing structure for multi-chip modules as in claim
2 2 wherein the intervening member comprises packing.

Kouichi Takahashi, et al.
Application No.: 09/590,897
Page 3

PATENT

1 5. (Previously presented): A sealing structure for multi-chip modules
2 as in claim 1 wherein the intervening member is slidably disposed between the frame and
3 the cap.

1 6. (Previously presented): A sealing structure for multi-chip modules
2 as in claim 5 wherein the intervening member comprises plastic material.

1 7. (Original): A sealing structure for multi-chip modules as in claim
2 1 wherein the cap comprises an air-cooled heat sink.

1 8. (Original): A sealing structure for multi-chip modules as in claim
2 1 wherein the wiring board comprises a ceramic material, the cap comprises at least one
3 of aluminum and copper, and the frame comprises a ferronickel alloy.

1 9. (Currently amended): A sealing structure for multi-chip modules
2 comprising:
3 a wiring board having one face mounted with a plurality of semiconductor
4 devices and another face having connecting pins arranged thereover;
5 a first frame having a thermal expansion coefficient compatible with that
6 of the wiring board, the first frame provided on a periphery of the face of the wiring
7 board mounted with the semiconductor devices;
8 a second frame disposed over the first frame;
9 a cap having a circumference and having a thermal expansion coefficient
10 different from that of the first and second frames and covering the plurality of
11 semiconductor devices;
12 a heat conducting material disposed between the cap and the plurality of
13 semiconductor devices for transmitting heat from the semiconductor devices to the cap;
14 an attachment to fix the first frame and the wiring board to each other;
15 a fastener for fastening the first and second frames and the cap together
16 via an intervening member,

Kouichi Takahashi, et al.
Application No.: 09/590,897
Page 4

PATENT

17 the cap being spaced apart from the first and second frames by the
18 intervening member,
19 wherein there is an absence of any direct physical contact between the cap
20 and either the first and second frames.

1 10. (Original): A sealing structure for multi-chip modules as in claim
2 9 wherein O ring grooves are provided in one face of the first frame and one face of the
3 second frame, and the cap is fastened between the first frame and the second frame using
4 at least one O ring.

1 11. (Original): A sealing structure for multi-chip modules as in claim
2 10 wherein an elastic member is provided between a side face of the cap and a face of the
3 first frame.

1 12. (Original): A sealing structure for multi-chip modules as in claim
2 9 wherein elastic packing is provided between the first frame and the second frame so as
3 to cover the circumference of the cap.